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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,255	04/11/2000	TAKANORI SHINOKI	2000-0465A	5270

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EXAMINER
BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/529,255

Applicant(s)

SHINOKI ET AL.

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
4a) Of the above claim(s) 13-16 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 9-12, 17 and 18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 30, 2004 has been entered. The Applicant's Amendments and Accompanying Remarks, filed August 30, 2004, have been entered and have been carefully considered. Claims 9, 10 and 18 are amended, claims 12 – 16 are withdrawn and claims 9 – 11 and 17 – 18 are pending. It should be noted that a new Examiner is working on this Patent Application. In order to clarify the previously set forth rejection, the Examiner has revised the 35 USC 112 rejection as detailed in paragraphs 17 – 18 and the rejection as unpatentable over Shinjou et al. (US 4,795,559) as detailed in paragraph 20 of the previous Office Action dated March 4, 2004. The invention as currently claimed is not found to be patentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 9 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention. Claims 10 – 11 and 17 are rejected as being dependent on rejected claims. Claims 9 and 18 recite physical properties of a nonwoven fabric comprising at least 50% by weight or more of polyester fibers having a fineness of 1.0 – 6.5 denier (i.e. double refraction, heat shrinkage stress, breaking length at elongation of 5%). *Ex parte Slob*, 157 USPQ 172, states the following with regard to an article claimed by defining property values:

Claims merely setting forth physical characteristics desired in article, and not setting forth specific compositions which would meet such characteristics, are invalid as vague, indefinite and functional since they cover any conceivable combination of ingredients, either presently existing or which might be discovered in future and which would impart desired characteristics; thus expression “a liquefiable substance having a liquefaction temperature from about 40°C to about 300°C and being compatible with the ingredients in the powdered detergent composition” is too broad and indefinite since it purports to cover everything which will perform the desired functions regardless of its composition, and in effect, recites compounds by what it is desired that they do rather than what they are; expression also is too broad since it appears to read upon the materials that could not possibly be used to accomplish purposes intended.

Furthermore, it is necessary that the product be described with sufficient particularity that it can be identified so that one can determine what will and will not infringe. Thus, claims 9 – 11 and 17 - 18 are indefinite for reciting only the desired physical properties of the nonwoven fabric comprising at least 50% by weight or more of polyester fibers having a fineness of 1.0 – 6.5 denier, rather than setting forth structural and/or chemical limitations of said fabrics.

Claim Rejections - 35 USC § 103

4. Claims 9, 11 and 17 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pall et al. (US 4,594,202).

Pall is directed to a method of making cylindrical fibrous filter structures (Title).

As to claims 9 and 17 – 18, Pall teaches that the fibrous structure comprises a mass of

nonwoven, synthetic, polymeric microfibers (column 9, lines 1 – 5). Pall teaches that the fibers can comprise diameters ranging from 1.5 to 20 micrometers; it should be noted that this overlaps Applicant's denier requirement. In Example 44, it is shown that 100% PBT fiber is used, which is known to be a type of polyester fiber.

As to claim 11, Pall teaches that the fibers can comprise polybutylene terephthalate (column 9, lines 20 – 30). It should be noted that it is known in the art that polybutylene terephthalate is synthesized from 1,4-butanediol and terephthalic acid.

Pall discloses the claimed invention except for that the pore size is 42 micrometers or less and an air permeability of 0.2 – 5.0cc/cm²s. It should be noted that the pore size and air permeability are result effective variables. For example, as pore size and permeability increases, the material is capable of filtering more material. However, a large pore size and permeability would possibly allow materials to pass through the filter undesirably and too small of a pore size and permeability would possibly cause materials to get stuck and not filter through. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a support member having a pore size of 42 micrometers or less, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the pore size to create a support member with optimal permeability.

Although Pall does not explicitly teach the claimed double refraction of 0.170 or more, a heat shrinkage stress at 200 degrees Celsius of 0.10-0.60 g/d and a mean value of breaking length

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at an elongation of 5% in a lengthwise direction (MD) and a crosswise direction (CD) of 4.0km or more, it is reasonable to presume that double refraction of 0.170 or more, a heat shrinkage stress at 200 degrees Celsius of 0.10-0.60 g/d and a mean value of breaking length at an elongation of 5% in a lengthwise direction (MD) and a crosswise direction (CD) of 4.0km or more is inherent. Support for said presumption is found in the use of like materials (i.e. a nonwoven fabric comprising 20 – 80% polyester fibers having an air permeability of 0.1– 5 cc/cm²s and a fiber denier of 1 to 3) which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of double refraction of 0.170 or more, a heat shrinkage stress at 200 degrees Celsius of 0.10-0.60 g/d and a mean value of breaking length at an elongation of 5% in a lengthwise direction (MD) and a crosswise direction (CD) of 4.0km or more would obviously have been present once the Pall product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

5. Claims 9 - 10 and 17 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinjou et al. (US 4,795,559).

Shinjou is directed to a semi permeable membrane support (Title) suitable for ultra-filtration and reverse osmosis (column 1, lines 1 – 15).

As to claims 9 and 17 – 18, Shinjou teaches a nonwoven fabric having an air permeability of 0.1 – 5 cc/cm²/sec (Abstract). Shinjou teaches that the fabric comprises 20 – 80% polyester fibers having a denier of 0.1 – 5 (Abstract).

As to claim 10, Shinjou teaches that the fabric comprises 20 – 80% polyester fibers, which overlaps with Applicant's requirement of 50 – 70%.

Shinjou discloses the claimed invention except for that the pore size is 42 micrometers or less as required by claim 9. It should be noted that the pore size is a result effective variable. For example, as pore size increases, the permeability increases. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a support member having a pore size of 42 micrometers or less, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the pore size to create a support member with optimal permeability.

Although Shinjou does not explicitly teach the claimed double refraction of 0.170 or more, a heat shrinkage stress at 200 degrees Celsius of 0.10-0.60 g/d and a mean value of breaking length at an elongation of 5% in a lengthwise direction (MD) and a crosswise direction (CD) of 4.0km or more, it is reasonable to presume that double refraction of 0.170 or more, a heat shrinkage stress at 200 degrees Celsius of 0.10-0.60 g/d and a mean value of breaking length at an elongation of 5% in a lengthwise direction (MD) and a crosswise direction (CD) of 4.0km or more is inherent. Support for said presumption is found in the use of like materials (i.e. a nonwoven fabric comprising 20 – 80% polyester fibers having an air permeability of 0.1– 5 cc/cm²s and a fiber denier of 1 to 3) which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of double refraction of 0.170 or more, a heat shrinkage stress at 200 degrees

Celsius of 0.10-0.60 g/d and a mean value of breaking length at an elongation of 5% in a lengthwise direction (MD) and a crosswise direction (CD) of 4.0km or more would obviously have been present once the Shinjou product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Response to Arguments

6. Applicant's arguments filed August 30, 2004 have been fully considered but they are not persuasive.
7. In response to Applicant's argument that the current amendment further defines the structure and composition of the claimed invention, the Examiner respectfully argues that the current amendment does not overcome the 35 USC 112 rejection. Although the Applicant has further limited the composition of the nonwoven material, the Applicant still heavily relies on the physical properties of the nonwoven to define the invention. It is the position of the Examiner that any nonwoven fabric comprising at least 50% by weight of polyester fibers having a denier of 1.0 – 6.5 would meet Applicant's claim limitations. The currently applied art reads on the present claim limitations, therefore, it is asserted that the claimed properties must be inherent to the prior art product. If said properties is not inherent, it is asserted that Applicant's claim must be incomplete. In other words, if Applicant's asserts a lack of inherency in the prior art product, then Applicant's claimed invention is missing an element that is critical to the invention, which would patentably distinguish it from the known prior art.
8. In response to Applicant's argument that Shinjou does not disclose or suggest that the breakage length of a fiber at 5% elongation is equal to 4.0 km or more, the Examiner respectfully

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argues that the arguments of the attorney cannot be taken as evidence. The Applicant indicates that the stress-strain curve pattern of polyester nonwoven fabrics is well-known but has failed to provide a copy to confirm Applicant's equation. Also, the Applicant indicates that the breaking length at elongation of 5% value is an estimation; it is unclear how accurate the estimation is. Furthermore, the Applicant relies on the Examples of the reference. Although, the Examples do provide some information about the nature of the Applicant's invention, the reference must be taken as a whole. In order for the Examiner to give full weight to Applicant's arguments concerning the breakage length at 5% elongation, the Examiner highly suggests that the Applicant submit a 37 CFR 1.132 Declaration to establish that Shinjou does not meet Applicant's requirement of a breaking length of at least 4 km.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer Boyd
November 5, 2004


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